Value X

## SEQUENCE LISTING

## (1) GENERAL INFORMATION:

	(I) GENE	TALL INFORMATION:
5	(i)	APPLICANTS: Salfeld, Jochen G. Allen, Deborah J. Hoogenboom, Hendricus R.J.M.
10		Kaymakcalan, Zehra Labkovsky, Boris Mankovich, John A. McGuinness, Brian T. Roberts, Andrew J.
15		Sakorafas, Paul Schoenhaut, David Vaughan, Tristan J. White, Michael Wilton, Andrew J.
20	(ii)	TITLE OF INVENTION: Human Antibodies that Bind Human TNFo
	(iii)	NUMBER OF SEQUENCES: 37
25	(iv)	CORRESPONDENCE ADDRESS:  (A) ADDRESSEE: LAHIVE & COCKFIELD  (B) STREET: 60 State Street, suite 510  (C) CITY: Boston  (D) STATE: Massachusetts
30	(v)	(E) COUNTRY: USA (F) ZIP: 02109-1875  COMPUTER READABLE FORM:
35	(*)	(A) MEDIUM TYPE: Floppy disk (B) COMPUTER: IBM PC compatible (C) OPERATING SYSTEM: PC-DOS/MS-DOS (D) SOFTWARE: PatentIn Release #1.0, Version #1.25
40	(vi)	CURRENT APPLICATION DATA:  (A) APPLICATION NUMBER: US  (B) FILING DATE: 08-FEB-1996  (C) CLASSIFICATION:
45	(viii)	ATTORNEY/AGENT INFORMATION:  (A) NAME: DeConti, Giulio A., Jr.  (B) REGISTRATION NUMBER: 31,503  (C) REFERENCE/DOCKET NUMBER: BBI-043
50	(ix)	TELECOMMUNICATION INFORMATION: (A) TELEPHONE: (617)227-7400 (B) TELEFAX: (617)227-5941
	(2) INFO	RMATION FOR SEQ ID NO:1:
55 <sup>-</sup>	(i)	SEQUENCE CHARACTERISTICS: (A) LENGTH: 107 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

		(ii)	MOL	ECULI	E TY	PE: ]	pept:	ide									
		(v)	FRA	GMEN'	r TY	PE: :	inte	rnal									
5		(xi)	SEQ	JENCI	E DES	SCRI	PTIO	N: SI	EQ II	D NO	:1:						
		Asp 1	Ile	Gln	Met	Thr 5	Gln	Ser	Pro	Ser	Ser 10	Leu	Ser	Ala	Ser	Val 15	Gly
10		Asp	Arg	Val	Thr 20	Ile	Thr	Cys	Arg	Ala 25	Ser	Gln	Gly	Ile	Arg 30	Asn	Tyr
15		Leu	Ala	Trp 35	Tyr	Gln	Gln	Lys	Pro 40	Gly	Lys	Ala	Pro	Lys 45	Leu	Leu	Ile
		Tyr	Ala 50	Ala	Ser	Thr	Leu	Gln 55	Ser	Gly	Val	Pro	Ser 60	Arg	Phe	Ser	Gly
20		Ser 65	Gly	Ser	Gly	Thr	Asp 70	Phe	Thr	Leu	Thr	Ile 75	Ser	Ser	Leu	Gln	Pro 80
		Glu	Asp	Val	Ala	Thr 85	Tyr	Tyr	Cys	Gln	Arg 90	Tyr	Asn	Arg	Ala	Pro 95	Tyr
25		Thr	Phe	Gly	Gln 100	Gly	Thr	Lys	Val	Glu 105	Ile	Lys					
30	(2)	INFO	RMAT	ON I	FOR S	SEQ I	D NO	0:2:									
30		(i)	(B)	JENCI LEN TYI	NGTH:	: 121	ami aci	ino a id		5							
35		(ii)	MOLI	ECULI	E TYI	?E: p	pepti	ide									
		(v)	FRAC	MENT	TYI	PE: i	inter	nal									
40		(xi)	SEQU	JENCI	E DES	CRII	OITS	1: SE	EQ II	ON C	:2:						
		Glu 1	Val	Gln	Leu	Val 5	Glu	Ser	Gly	Gly	Gly 10	Leu	Val	Gln	Pro	Gly 15	Arg
45		Ser	Leu	Arg	Leu 20	Ser	Cys	Ala	Ala	Ser 25	Gly	Phe	Thr	Phe	Asp 30	Asp	Tyr
50		Ala	Met	His 35	Trp	Val	Arg	Gln	Ala 40	Pro	Gly	Lys	Gly	Leu 45	Glu	Trp	Val
		Ser	Ala 50	Ile	Thr	Trp	Asn	Ser 55	Gly	His	Ile	Asp	Tyr 60	Ala	Asp	Ser	Val
55		Glu 65	Gly	Arg	Phe	Thr	Ile 70	Ser	Arg	Asp	Asn	Ala 75	Lys	Asn	Ser	Leu	Tyr 80
		Leu	Gln	Met	Asn	Ser 85	Leu	Arg	Ala	Glu	Asp 90	Thr	Ala	Val	Tyr	Tyr 95	Cys

Y

		Ala	Lys	Val	Ser 100	Tyr	Leu	Ser	Thr	Ala 105	Ser	Ser	Leu	Asp	Tyr 110	Trp	Gly
5		Gln	Gly	Thr 115	Leu	Val	Thr	Val	Ser 120	Ser							
	(2)	INFO	RMAT:	ON I	FOR 8	SEQ :	ID N	0:3:									
10		(i)	(B)	LEI TYI	NGTH PE: 8		amino o ac	o ac: id									
15		(ii)	MOLE	ECULI	E TYI	PE: 1	pept	ide									
		(v)	FRAC	MENT	r TYI	PE: :	inte	rnal									
20		(ix)	(A) (B)	NAM LOC	ME/KI	ON: 9	Э	fied			"Xaa	is '	Thr o	or Al	la"		
25		(xi)									:3:						
		Gln 1	Arg	Tyr	Asn	Arg 5	Ala	Pro	Tyr	Xaa							
30	(2)	INFO	RMATI	ON E	FOR S	SEQ I	ID NO	0:4:									
35		(i)	(B)	LEN TYI	NGTH:		amin ac:	no ao id									
		(ii)	MOLE	CULE	TYI	PE: 1	pept:	ide									
40		(v)	FRAC	MENT	TYI	PE: i	inte	rnal									
10		(ix)		NAM	ΊΕ/ΚΙ	EY: N ON: 1		fied-	-site	e							
15								ION:	/not	e= '	"Xaa	is :	Tyr c	or As	sn"		
		(xi)	SEQU	JENCE	E DES	CRIE	PTIO	N: SI	EQ II	ON C	:4:						
50		Val 1	Ser	Tyr	Leu	Ser 5	Thr	Ala	Ser	Ser	Leu 10	Asp	Xaa				
	(2)	INFO	TAMS	ON F	OR S	SEQ 1	D NO	D:5:									
55		(i)	(B)	LEN TYP	IGTH: PE: a		mino aci	o aci id									
		(ii)	MOLE	CULE	TYE	PE: p	epti	ide						,			

		(v)	FRAGMENT TYPE: internal
5		(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:5:
3		Ala 1	Ala Ser Thr Leu Gln Ser 5
10	(2)	INFO	RMATION FOR SEQ ID NO:6:
15		(i)	SEQUENCE CHARACTERISTICS:  (A) LENGTH: 17 amino acids  (B) TYPE: amino acid  (D) TOPOLOGY: linear
		(ii)	MOLECULE TYPE: peptide
20		(v)	FRAGMENT TYPE: internal
20		(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:6:
25		Ala 1	Ile Thr Trp Asn Ser Gly His Ile Asp Tyr Ala Asp Ser Val Glu 5 10 15
23		Gly	
			•
30	(2)	INFO	RMATION FOR SEQ ID NO:7:
35		(i)	SEQUENCE CHARACTERISTICS:  (A) LENGTH: 11 amino acids  (B) TYPE: amino acid  (D) TOPOLOGY: linear
		(ii)	MOLECULE TYPE: peptide
40		(v)	FRAGMENT TYPE: internal
40		(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:7:
45		Arg 1	Ala Ser Gln Gly Ile Arg Asn Tyr Leu Ala 5 10
	(2)	INFO	RMATION FOR SEQ ID NO:8:
50 .		(i)	SEQUENCE CHARACTERISTICS:  (A) LENGTH: 5 amino acids  (B) TYPE: amino acid  (D) TOPOLOGY: linear
55		(ii)	MOLECULE TYPE: peptide
<i>33</i>		(v)	FRAGMENT TYPE: internal
		(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:8:

47

Asp Tyr Ala Met His

5	(2)	INFO	RMAT:	ION I	FOR S	SEQ :	ID NO	0:9:									
10		(i)	(B)	) LEI	NGTH PE: 8	ARACT : 10' amino	7 am:	ino a id		S							
•		(ii)	MOLI	ECULI	E TY	PE: j	pept:	ide									
15		(v)	FRAG	GMEN'	r TY	PE: :	inte	rnal									
13		(xi)	SEQ	JENCI	E DES	SCRII	PTIO	N: S	EQ II	ои с	:9:						
20		Asp 1	Ile	Gln	Met	Thr 5	Gln	Ser	Pro	Ser	Ser 10	Leu	Ser	Ala	Ser	Ile 15	Gly
		Asp	Arg	Val	Thr 20	Ile	Thr	Cys	Arg	Ala 25	Ser	Gln	Gly	Ile	Arg 30	Asn	Tyr
25		Leu	Ala	Trp 35	Tyr	Gln	Gln	Lys	Pro 40	Gly	Lys	Ala	Pro	Lys 45	Leu	Leu	Ile
		Tyr	Ala 50	Ala	Ser	Thr	Leu	Gln 55	Ser	Gly	Val	Pro	Ser 60	Arg	Phe	Ser	Gly
30		Ser 65	Gly	Ser	Gly	Thr	Asp 70	Phe	Thr	Leu	Thr	Ile 75	Ser	Ser	Leu	Gln	Pro 80
35		Glu	Asp	Val	Ala	Thr 85	Tyr	Tyr	Cys	Gln	Lys 90	Tyr	Asn	Ser	Ala	Pro 95	Tyr
50	•	Ala	Phe	Gly	Gln 100	Gly	Thr	Lys	Val	Glu 105	Ile	Lys					
40	(2)	INFO	RMATI	ON 1	FOR S	SEQ I	ID NO	0:10	:								
		(i)		LEI	NGTH:	ARACT	L am:	ino a		5							
45						3Y:, ]											
		(ii)	MOLE	ECULI	TYI	PE: 1	pept	ide									
50		(v)	FRAC	SMENT	r TYI	PE: i	inte	rnal									
		(xi)	SEQU	JENCI	E DES	SCRIE	OITS	N: SI	EQ II	ONO	:10:						
55		Gln 1	Val	Gln	Leu	Val 5	Glu	Ser	Gly	Gly	Gly 10	Leu	Val	Gln	Pro	Gly 15	Arg
		Ser	Leu	Arg	Leu 20	Ser	Cys	Ala	Ala	Ser 25	Gly	Phe	Thr	Phe	Asp 30	Asp	Tyr

									-	48 -							
		Ala	Met	His 35	Trp	Val	Arg	Gln	Ala 40	Pro	Gly	Lys	Gly	Leu 45	Asp	Trp	Val
5		Ser	Ala 50	Ile	Thr	Trp	Asn	Ser 55	Gly	His	Ile	Asp	Tyr 60	Ala	Asp	Ser	Val
		Glu 65	Gly	Arg	Phe	Ala	Val 70	Ser	Arg	Asp	Asn	Ala 75	Lys	Asn	Ala	Leu	Tyr 80
10		Leu	Gln	Met	Asn	Ser 85	Leu	Arg	Pro <sub>.</sub>	Glu	Asp 90	Thr	Ala	Val	Tyr	Tyr 95	Cys
15	••	Thr	Lys	Ala	Ser 100	Tyr	Leu	Ser	Thr	Ser 105	Ser	Ser	Leu	Asp	Asn 110	Trp	Gly
13	4	Gln	Gly	Thr 115	Leu	Val	Thr	Val	Ser 120	Ser							
20	(2)	INFO	RMAT	ION I	FOR S	SEQ 1	D NO	):11	•								
25		(i)	(A) (B)	JENCE LEM TYI	NGTH:	: 9 a	amino aci	ac:									
		(ii)	MOLI	CULE	TYI	PE: p	epti	ide									
20		(v)	FRAC	GMEN'	TYI	PE: i	nter	nal									
30		(xi)	SEQU	JENCI	E DES	CRIE	PTION	J: SI	EQ II	NO:	:11:						
35		Gln 1	Lys	Tyr	Asn	Ser 5	Ala	Pro	Tyr	Ala							
	(2)	INFO	RMAT	ON E	FOR S	SEQ 1	D NO	):12:	:								
40		(i)	(A) (B)	JENCE LEN TYPE TOPE	IGTH : PE : æ	9 a	mino aci	aci									
45		(ii)	MOLE	ECULE	TYP	PE: p	epti	.de									
		(v)	FRAC	EMEN'I	TYE	PE: i	.nter	nal									
		(xi)	SEQU	JENCE	DES	CRIE	MOIT	I: SE	EQ II	NO:	12:						
50		Gln 1	Lys	Tyr	Asn	Arg 5	Ala	Pro	Tyr	Ala							
55	(2)	INFOR	SEQU	ON F JENCE LEN	CHA	RACI	ERIS	TICS	3:								
				TYP													

		(ii) MOLECULE TYPE: peptide
5		(v) FRAGMENT TYPE: internal
J		(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:
10		Gln Lys Tyr Gln Arg Ala Pro Tyr Thr 1 5
	(2)	INFORMATION FOR SEQ ID NO:14:
15	·	<ul><li>(i) SEQUENCE CHARACTERISTICS:</li><li>(A) LENGTH: 9 amino acids</li><li>(B) TYPE: amino acid</li><li>(D) TOPOLOGY: linear</li></ul>
20		(ii) MOLECULE TYPE: peptide
		(v) FRAGMENT TYPE: internal
		(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:
25		Gln Lys Tyr Ser Ser Ala Pro Tyr Thr 1 5
30	(2)	INFORMATION FOR SEQ ID NO:15:
		<ul><li>(i) SEQUENCE CHARACTERISTICS:</li><li>(A) LENGTH: 9 amino acids</li><li>(B) TYPE: amino acid</li></ul>
35		(D) TOPOLOGY: linear
		(ii) MOLECULE TYPE: peptide
		(v) FRAGMENT TYPE: internal
40		(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:
		Gln Lys Tyr Asn Ser Ala Pro Tyr Thr 1 5
45	(2)	INFORMATION FOR SEQ ID NO:16:
50		<ul><li>(i) SEQUENCE CHARACTERISTICS:</li><li>(A) LENGTH: 9 amino acids</li><li>(B) TYPE: amino acid</li><li>(D) TOPOLOGY: linear</li></ul>
		(ii) MOLECULE TYPE: peptide
55		() EDACMENTO OVER AND COMPA

		(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:
5		Gln Lys Tyr Asn Arg Ala Pro Tyr Thr 1 5
3	(2)	INFORMATION FOR SEQ ID NO:17:
	(2)	
10		<ul><li>(i) SEQUENCE CHARACTERISTICS:</li><li>(A) LENGTH: 9 amino acids</li><li>(B) TYPE: amino acid</li><li>(D) TOPOLOGY: linear</li></ul>
15		(ii) MOLECULE TYPE: peptide
	•	(v) FRAGMENT TYPE: internal
		(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:
20	*	Gln Lys Tyr Asn Ser Ala Pro Tyr Tyr 1 5
25	(2)	INFORMATION FOR SEQ ID NO:18:
		<ul><li>(i) SEQUENCE CHARACTERISTICS:</li><li>(A) LENGTH: 9 amino acids</li><li>(B) TYPE: amino acid</li><li>(D) TOPOLOGY: linear</li></ul>
30		(ii) MOLECULE TYPE: peptide
		(v) FRAGMENT TYPE: internal
35		(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:
		Gln Lys Tyr Asn Ser Ala Pro Tyr Asn 1 5
40	(2)	INFORMATION FOR SEQ ID NO:19:
45		<ul><li>(i) SEQUENCE CHARACTERISTICS:</li><li>(A) LENGTH: 9 amino acids</li><li>(B) TYPE: amino acid</li><li>(D) TOPOLOGY: linear</li></ul>
		(ii) MOLECULE TYPE: peptide
50		(v) FRAGMENT TYPE: internal
		(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:
55		Gln Lys Tyr Thr Ser Ala Pro Tyr Thr 1 5

(2) INFORMATION FOR SEQ ID NO:20:

<u>-</u>	<ul><li>(i) SEQUENCE CHARACTERISTICS:</li><li>(A) LENGTH: 9 amino acids</li><li>(B) TYPE: amino acid</li><li>(D) TOPOLOGY: linear</li></ul>
5	(ii) MOLECULE TYPE: peptide
	(v) FRAGMENT TYPE: internal
10	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20
	Gln Lys Tyr Asn Arg Ala Pro Tyr Asn 1 5
15	(2) INFORMATION FOR SEQ ID NO:21:
20	<ul><li>(i) SEQUENCE CHARACTERISTICS:</li><li>(A) LENGTH: 9 amino acids</li><li>(B) TYPE: amino acid</li><li>(D) TOPOLOGY: linear</li></ul>
	(ii) MOLECULE TYPE: peptide
25	(v) FRAGMENT TYPE: internal
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21
30	Gln Lys Tyr Asn Ser Ala Ala Tyr Ser 1 5
	(2) INFORMATION FOR SEQ ID NO:22:
35	<ul><li>(i) SEQUENCE CHARACTERISTICS:</li><li>(A) LENGTH: 9 amino acids</li><li>(B) TYPE: amino acid</li><li>(D) TOPOLOGY: linear</li></ul>
40	(ii) MOLECULE TYPE: peptide
	(v) FRAGMENT TYPE: internal
45	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22
43	Gln Gln Tyr Asn Ser Ala Pro Asp Thr 1 5
50	(2) INFORMATION FOR SEQ ID NO:23:
	(i) SEQUENCE CHARACTERISTICS:  (A) LENGTH: 9 amino acids
55	<ul><li>(B) TYPE: amino acid</li><li>(D) TOPOLOGY: linear</li></ul>
	(ii) MOLECULE TYPE: peptide
	(v) FRAGMENT TYPE: internal

		(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:
5		Gln Lys Tyr Asn Ser Asp Pro Tyr Thr 1 5
	(2)	INFORMATION FOR SEQ ID NO:24:
10		<ul><li>(i) SEQUENCE CHARACTERISTICS:</li><li>(A) LENGTH: 9 amino acids</li><li>(B) TYPE: amino acid</li><li>(D) TOPOLOGY: linear</li></ul>
15		(ii) MOLECULE TYPE: peptide
		(v) FRAGMENT TYPE: internal
20		(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:
		Gln Lys Tyr Ile Ser Ala Pro Tyr Thr 1 5
25	(2)	INFORMATION FOR SEQ ID NO:25:
30		<ul><li>(i) SEQUENCE CHARACTERISTICS:</li><li>(A) LENGTH: 9 amino acids</li><li>(B) TYPE: amino acid</li><li>(D) TOPOLOGY: linear</li></ul>
		(ii) MOLECULE TYPE: peptide
35		<pre>(v) FRAGMENT TYPE: internal (xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:</pre>
40		Gln Lys Tyr Asn Arg Pro Pro Tyr Thr 1 5
	(2)	INFORMATION FOR SEQ ID NO:26:
45		<ul><li>(i) SEQUENCE CHARACTERISTICS:</li><li>(A) LENGTH: 9 amino acids</li><li>(B) TYPE: amino acid</li><li>(D) TOPOLOGY: linear</li></ul>
50		(ii) MOLECULE TYPE: peptide
		(v) FRAGMENT TYPE: internal
55		(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:
55		Gln Arg Tyr Asn Arg Ala Pro Tyr Ala 1 5

(2) INFORMATION FOR SEQ ID NO:27:

5		(i)	SEQUENCE CHARACTERISTICS:  (A) LENGTH: 12 amino acids  (B) TYPE: amino acid  (D) TOPOLOGY: linear		
		(ii)	MOLECULE TYPE: peptide		
10		(v)	FRAGMENT TYPE: internal		
		(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:27:		
15		Ala 1	Ser Tyr Leu Ser Thr Ser Ser Ser Leu 5 10	Asp	Asn
	(2)	INFO	RMATION FOR SEQ ID NO:28:		
20		(i)	SEQUENCE CHARACTERISTICS:  (A) LENGTH: 12 amino acids  (B) TYPE: amino acid  (D) TOPOLOGY: linear		
25		(ii)	MOLECULE TYPE: peptide		
23		(v)	FRAGMENT TYPE: internal		
		(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:28:		
30		Ala 1	Ser Tyr Leu Ser Thr Ser Ser Ser Leu 5 10	Asp	Lys
35	(2)	INFO	RMATION FOR SEQ ID NO:29:		
		(i)	SEQUENCE CHARACTERISTICS:  (A) LENGTH: 12 amino acids  (B) TYPE: amino acid  (D) TOPOLOGY: linear		
40		(ii)	MOLECULE TYPE: peptide		
			FRAGMENT TYPE: internal		
45		(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:29:		
		Ala 1	Ser Tyr Leu Ser Thr Ser Ser Ser Leu 5 10	Asp	Tyr
50	(2)	INFO	RMATION FOR SEQ ID NO:30:		
55		(i)	SEQUENCE CHARACTERISTICS:  (A) LENGTH: 12 amino acids  (B) TYPE: amino acid  (D) TOPOLOGY: linear		
		(ii)	MOLECULE TYPE: peptide		

		(v)	FRAGMENT TYPE: internal			
		(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:3	30:		
5		Ala 1	Ser Tyr Leu Ser Thr Ser Ser I 5	Leu L0	Asp	Asp
10	(2)	INFO	RMATION FOR SEQ ID NO:31:			
· ·		(i)	SEQUENCE CHARACTERISTICS:  (A) LENGTH: 12 amino acids  (B) TYPE: amino acid  (D) TOPOLOGY: linear			
15		(ii)	MOLECULE TYPE: peptide			
		(v)	FRAGMENT TYPE: internal			
20		(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:3	1:		
		Ala 1	Ser Tyr Leu Ser Thr Ser Phe Ser I 5 1	eu .0	Asp	Tyr
25	(2)	INFO	RMATION FOR SEQ ID NO:32:			
30		(i)	SEQUENCE CHARACTERISTICS:  (A) LENGTH: 12 amino acids  (B) TYPE: amino acid  (D) TOPOLOGY: linear			
		(ii)	MOLECULE TYPE: peptide			
35		(v)	FRAGMENT TYPE: internal			
		(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:3	2:		
40		Ala 1	Ser Tyr Leu Ser Thr Ser Ser L 5 1	.eu .0	His	Tyr
	(2)	INFOR	RMATION FOR SEQ ID NO:33:			
45		(i)	SEQUENCE CHARACTERISTICS:  (A) LENGTH: 12 amino acids  (B) TYPE: amino acid  (D) TOPOLOGY: linear			
50		(ii)	MOLECULE TYPE: peptide			
		(v)	FRAGMENT TYPE: internal			
55		(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:3	3:		
		Ala 1	Ser Phe Leu Ser Thr Ser Ser Ser L 5	eu .0	Glu	Tyr

	(2)	INFO	RMATION FOR SEQ ID NO:34:	
5		(i)	SEQUENCE CHARACTERISTICS:  (A) LENGTH: 12 amino acids  (B) TYPE: amino acid  (D) TOPOLOGY: linear	
		(ii)	MOLECULE TYPE: peptide	
10		(v)	FRAGMENT TYPE: internal	
		(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:34:	
15		Ala 1	Ser Tyr Leu Ser Thr Ala Ser Ser Leu Glu Tyr 5 10	
	(2)	INFOR	RMATION FOR SEQ ID NO:35:	
20		(i)	SEQUENCE CHARACTERISTICS:  (A) LENGTH: 12 amino acids  (B) TYPE: amino acid  (D) TOPOLOGY: linear	
25		(ii)	MOLECULE TYPE: peptide	
		(v)	FRAGMENT TYPE: internal	
30		(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:35:	
30		Val 1	Ser Tyr Leu Ser Thr Ala Ser Ser Leu Asp Asn 5 10	
35	(2)	INFOR	RMATION FOR SEQ ID NO:36:	
40		(i)	SEQUENCE CHARACTERISTICS:  (A) LENGTH: 321 base pairs  (B) TYPE: nucleic acid  (C) STRANDEDNESS: double  (D) TOPOLOGY: linear	
		(ii)	MOLECULE TYPE: cDNA	
45		(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:36:	
	GAC	ATCCAC	A TGACCCAGTC TCCATCCTCC CTGTCTGCAT CTGTAGGGGA CAGAGTCACC	60
50	ATC	ACTTGI	C GGGCAAGTCA GGGCATCAGA AATTACTTAG CCTGGTATCA GCAAAAACCA	120
50	GGG	AAAGCC	C CTAAGCTCCT GATCTATGCT GCATCCACTT TGCAATCAGG GGTCCCATCT	180
	CGG	rtcagi	G GCAGTGGATC TGGGACAGAT TTCACTCTCA CCATCAGCAG CCTACAGCCT	240
55	GAA	SATGTI	G CAACTTATTA CTGTCAAAGG TATAACCGTG CACCGTATAC TTTTGGCCAG	300
	GGG	ACCAAG	G TGGAAATCAA A	321

## (2) INFORMATION FOR SEQ ID NO 37:

25

AGT

5	<ul> <li>(i) SEQUENCE CHARACTERISTICS:</li> <li>(A) LENGTH: 363 base pairs</li> <li>(B) TYPE: nucleic acid</li> <li>(C) STRANDEDNESS: double</li> <li>(D) TOPOLOGY: linear</li> </ul>	
10	(ii) MOLECULE TYPE: cDNA  (xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:	
	GAGGTGCAGC TGGTGGAGTC TGGGGGAGGC TTGGTACAGC CCGGCAGGTC CCTGAGACTC	60
15	TCCTGTGCGG CCTCTGGATT CACCTTTGAT GATTATGCCA TGCACTGGGT CCGGCAAGCT	120
	CCAGGGAAGG GCCTGGAATG GGTCTCAGCT ATCACTTGGA ATAGTGGTCA CATAGACTAT	180
20	GCGGACTCTG TGGAGGGCCG ATTCACCATC TCCAGAGACA ACGCCAAGAA CTCCCTGTAT	240
	CTGCAAATGA ACAGTCTGAG AGCTGAGGAT ACGGCCGTAT ATTACTGTGC GAAAGTCTCG	300
	TACCTTAGCA CCGCGTCCTC CCTTGACTAT TGGGGCCAAG GTACCCTGGT CACCGTCTCG	360

363